

**Patent claims**

1. A seat assembly for a motor vehicle seat, having
  - 5 - a seat frame which defines a seat surface for a motor vehicle occupant, and
  - a pivotably mounted backrest which can be folded about a pivot axis onto the seat surface,
- 10 characterized in that the pivot axis (S) is moved along a predetermined path when the backrest (R) is folded forward onto the seat surface (F).
- 15 2. The seat assembly as claimed in claim 1, characterized in that the pivot axis (S) is formed by a physical subassembly (10, 20) of the seat assembly.
- 20 3. The seat assembly as claimed in claim 1 or 2, characterized in that the pivot axis (S) is formed by a bearing spindle (10) via which the backrest (R) is mounted on a frame subassembly (2).
- 25 4. The seat assembly as claimed in one of the preceding claims, characterized in that the pivot axis (S) is positively guided along the predetermined path when the backrest (R) is folded forward.
- 30 5. The seat assembly as claimed in claim 4, characterized in that the pivot axis (S) is positively guided by means of a guide device (20) which extends along the predetermined path.

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6. The seat assembly as claimed in claim 5, characterized in that the guide device (20) is formed by a guide slot.

5 7. The seat assembly as claimed in claim 4, characterized in that the pivot axis (S) is positively guided by means of a guide element (27) via which the pivot axis (S) is connected to a frame subassembly (2) and which is moved when the backrest (R) is folded  
10 forward.

8. The seat assembly as claimed in claim 7, characterized in that the guide element (27) is of longitudinally stretched-out design.

15 9. The seat assembly as claimed in claim 7 or 8, characterized in that the guide element (27) is formed by a guide lever.

20 10. The seat assembly as claimed in one of the preceding claims, characterized in that the backrest (R) is additionally connected outside the pivot axis (S) to a frame subassembly (2) in an articulated manner.

25 11. The seat assembly as claimed in claim 10, characterized in that the backrest (R) is connected outside the pivot axis (S) to the frame subassembly (2) via a coupling element (23) which extends from the  
30 backrest (R) to the frame subassembly (2) and is moved when the backrest (R) is folded forward.

12. The seat assembly as claimed in claim 11, characterized in that the coupling element (23) is  
35 formed by a coupling lever.

13. The seat assembly as claimed in claim 10,

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characterized in that the backrest (R) is connected outside the pivot axis (S) to the frame subassembly (2)

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via a guide device (25) which guides a section (16) of the backrest (R) when it is folded forward.

14. The seat assembly as claimed in claim 13,  
5 characterized in that the guide device (25) is formed by a guide slot.

15. The seat assembly as claimed in one of claims 10 to 14, characterized in that the movement of the pivot axis (S) along the predetermined path when the backrest (R) is folded forward is controlled by the interaction of the backrest (R) with the frame subassembly (2) outside the pivot axis (S).

16. The seat assembly as claimed in one of claims 10 to 15, characterized in that the pivot axis (S) is positively guided along the predetermined path by means of a guide device (20) stretched out along this path or by means of a guide element (27) via which the pivot axis (S) is connected to the frame subassembly (2), and in that the movement of the pivot axis (S) along the predetermined path is controlled by means of a coupling element (23) or by means of a guide device (25), by means of which element or by means of which device the backrest (R) is connected outside the pivot axis (S) to the frame subassembly (2).

17. The seat assembly as claimed in one of the preceding claims, characterized in that the pivot axis (S) is moved on a closed path when the backrest (R) is folded forward.

18. The seat assembly as claimed in claim 17, characterized in that the pivot axis (S) is moved from 35 one end (20a) to another end (20b) of an open curved path and back to the first end (20a) of the curved path when the backrest (R) is folded forward.

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19. The seat assembly as claimed in one of the preceding claims, characterized in that, when the backrest (R) is folded forward, the pivot axis (S) is moved, at least during part of the folding movement,  
5 along a direction which is essentially opposed to the direction of the folding movement.
20. The seat assembly as claimed in one of the preceding claims, characterized by means (21, 21a) for  
10 locking the pivot axis (S) in a position which corresponds to a backrest (R) swung up into a use position, and/or in a position which corresponds to a backrest (R) folded forward onto the seat surface (F).
- 15 21. The seat assembly as claimed in claim 20, characterized in that the means (21, 21a) for locking the pivot axis (S) comprise a locking lever (21).
- 20 22. The seat assembly as claimed in one of the preceding claims, characterized in that an adjusting device (4), by means of which the inclination of the swung-up backrest (R) can be adjusted between various use positions, is provided.
- 25 23. The seat assembly as claimed in claim 22, characterized by a locking device (5) for locking a previously set inclination of the backrest (R).
- 30 24. The seat assembly as claimed in claim 23, characterized in that the locking device is formed by the self-locking configuration of the adjusting device (4) or by a brake assigned to the adjusting device (4).

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25. The seat assembly as claimed in claim 23, characterized in that a separate locking device (5), which interacts with the adjusting device (4), is provided.

5 26. The seat assembly as claimed in claim 25, characterized in that the locking device (5) comprises a primary locking element (51) which acts on the adjusting device (4) to lock the latter, and a secondary locking element (52) with which the primary  
10 locking element (51) can be locked in a position in which it acts on the adjusting device (4).

27. The seat assembly as claimed in claim 26, characterized in that the secondary locking element  
15 (52) disengages the primary locking element (51) from the adjusting device (4) in order to be able to change the inclination of the backrest.

28. The seat assembly as claimed in one of the  
20 preceding claims, characterized by

- a pivotably mounted backrest (R) which can be adjusted in its inclination and has a front side (VO) serving to support a seat user's back, and  
25 - a spring arrangement (D, DF) having at least one elastic element with which the backrest (R) is prestressed elastically in such a manner that it has the tendency to pivot forward and lean with its front side (VO) against the seat user's back,

30 it being possible for the inclination of the backrest (R) to be adjusted counter to the action of the spring arrangement (D, DF) by the application of force to its front side (VO), and the spring arrangement (D, DF) acting on a gear element  
35 (104) which is coupled to the backrest (R) and which is assigned a locking device (105) with which the gear element (104) can be locked in different positions.

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29. The seat assembly as claimed in claim 28, characterized in that, in the locked state of the locking device (105), the backrest is locked in its particular position of inclination.

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30. The seat assembly as claimed in claim 28 or 29, characterized in that, in the unlocked state of the locking device (105), the inclination of the backrest (R) can be adjusted.

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31. The seat assembly as claimed in claim 30, characterized in that the backrest (R) can be pivoted forward onto the gear element (104) under the action of the spring arrangement (D, DF).

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32. The seat assembly as claimed in claim 30 or 31, characterized in that the backrest (R) can be pivoted rearward counter to the action of the spring arrangement (D, DF) under the action of a compressive force on its front side (VO).

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33. The seat assembly as claimed in one of claims 28 to 32, characterized in that the gear element (104) is part of a gear arrangement (102, 104), in particular a lever arrangement, via which the spring arrangement (D, DF) is coupled to the backrest (R).

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34. The seat assembly as claimed in claim 33, characterized in that the gear arrangement (102, 104) serves for transmitting a torque exerted on the gear element (104) by the spring arrangement (D, DF).

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35. The seat assembly as claimed in one of claims 28 to 34, characterized in that the gear element (104) is assigned a coupling (120, 121) by means of which the backrest (R) can be decoupled from the gear element (104) in such a manner

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that the backrest (R) can be folded forward in the direction of the seat surface (FL) of the motor vehicle seat without the gear element (104) being moved.

5 36. The seat assembly as claimed in claim 35, characterized in that the backrest (R), when it is decoupled from the gear element (104), is decoupled from the spring arrangement (D, DF), so that the latter does not act on the backrest (R).

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37. The seat assembly as claimed in one of claims 28 to 36, characterized in that the gear element (104) is assigned a coupling (120, 121) by means of which the backrest (R) can be decoupled from the gear element 15 (104) in such a manner that the backrest (R) can be folded forward in the direction of the seat surface when the gear element (104) is locked by means of a locking device (105).

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38. The seat assembly as claimed in one of claims 28 to 37, characterized in that, in order to decouple the backrest (R) from the gear element (104), the pivot axis of the backrest (R), when the backrest (R) is folded forward, is moved along a predetermined path 25 (120) which is preferably designed in such a manner that the movement of the pivot axis along the path (120) prevents a reaction of the pivoting movement of the backrest (R) on the gear element (104).

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39. The seat assembly as claimed in claim 38, characterized in that the path (120) is formed by a guide device in which the pivot axis is guided in a manner moveable to the left.

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40. The seat assembly as claimed in one of claims 35 to 37, characterized in that the gear element (104) can be disengaged from the backrest (R), so that the gear

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element (104) is not connected to the backrest (R).

41. The seat assembly as claimed in either of claims 39 and 40, characterized in that locking means 5 (103) are provided by means of which the coupling (120, 121) can be locked in a state in which the gear element (104) is coupled to the backrest (R).

42. The seat assembly as claimed in one of claims 39 10 to 41, characterized in that locking means (103) are provided by means of which the coupling (120, 121) can be locked in a state in which the gear element (104) is decoupled from the backrest (R).

43. The seat assembly as claimed in claim 38 or 39 and 15 41 or 42, characterized in that the blocking means (103) act on the pivot axis of the backrest (R) and prevent the movement thereof along the path (120).

44. The seat assembly as claimed in claim 43, 20 characterized in that the blocking means (103) are formed by a lever.

45. The seat assembly as claimed in one of claims 28 25 to 44, characterized in that the locking device (105) of the gear element (104) has a primary locking element (151) and a secondary locking element (152), the primary locking element (151), in the locked state, acting on the gear element (104) and the secondary locking element (152) blocking the primary locking element (151) in the locked state.

46. The seat assembly as claimed in one of claims 28 30 to 45, characterized in that the gear element (104) is 35 formed by a toothed segment lever (141).

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47. The seat assembly as claimed in one of claims 28 to 46, characterized in that the spring arrangement (D, DF) has a spring element which acts on the gear element (104).

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48. The seat assembly as claimed in one of claims 28 to 47, characterized in that the gear element (104) can be brought into engagement with the locking device (105) via a toothring (142).